

CLAIMS

I claim:

1. A system for data entry in a portable device comprising:
 - a keypad having a plurality of buttons, at least one of the buttons being associated with two or more characters;
 - a tilt sensor operable to detect a tilt subjected to the portable device by a user; and
 - a processor programmed to identify one of the two or more characters based on one of the plurality of buttons being pressed concurrently with the tilt subjected by the user.
2. The system of Claim 1, wherein the portable device is a mobile phone having a front face, left and right sides, and a top and bottom, and wherein the keypad is a standard 12-button alphanumeric keypad located on the front face of the mobile phone.
3. The system of Claim 2, wherein the tilt is detected along a first axis.
4. The system of Claim 2, wherein the tilt is detected along a first axis and a second axis.
5. The system of Claim 4, wherein the first and second axes are in a plane parallel to the front face of the mobile phone.

6. The system of Claim 4, wherein the first axis runs through and is perpendicular to the left and right sides of the mobile phone, wherein the second axis runs through and is perpendicular to the top and bottom, and wherein when the face of the mobile phone is facing a user, a tilt to the left along the second axis identifies a first character, a tilt away from the user along the first axis identifies a second character, a tilt to the right along the second axis identifies a third character, and no tilt identifies a fourth character.

7. The system of Claim 6, wherein a tilt toward the user along the first axis identifies a fifth character.

8. The system of Claim 6, wherein the fourth character is a numeral and the first, second, and third characters are letters located on a first button associated with the numeral on the standard 12-button keypad.

9. A method for entering data on a portable device having a standard twelve-button keypad, comprising:

determining a tilt of the portable device when a first button on the keypad has been actuated; and

disambiguating from among a plurality of characters associated with the first button by comparing the determined tilt to a predefined tilt menu associated with the first button.

10. The method of Claim 9, wherein the tilt is determined concurrently with the first button being actuated.

11. The method of Claim 9, wherein the portable device is a mobile phone having a display located on a front face, left and right sides, and a top and bottom, and wherein the keypad located on the front face of the mobile phone.
12. The system of Claim 11, wherein the tilt is determined along a first axis.
13. The system of Claim 11, wherein the tilt is determined along a first axis and a second axis.
14. The system of Claim 13, wherein the first and second axes are in a plane parallel to the front face of the mobile phone.
15. The system of Claim 13, wherein the first axis runs through and is perpendicular to the left and right sides of the mobile phone, wherein the second axis runs through and is perpendicular to the top and bottom, and wherein when the face of the mobile phone is facing a user, a tilt to the left along the second axis identifies a first character, a tilt away from the user along the first axis identifies a second character, a tilt to the right along the second axis identifies a third character, and no tilt identifies a fourth character.
16. The system of Claim 15, wherein a tilt toward the user along the first axis identifies a fifth character.

17. The system of Claim 15, wherein the fourth character is a numeral and the first, second, and third characters are letters located on a first button associated with the numeral on the standard 12-button keypad.
18. A method for disambiguating from among a plurality of characters associated with a first button on a 12-button keypad on a mobile phone, comprising:
- sampling tilt along two axes parallel to a front face of the mobile phone;
 - maintaining a sample stack indicative of a past tilt samples;
 - upon detecting the first button being pressed by a user, determining a tilt state by comparing a most recent tilt to at least one of the past tilt samples;
 - upon determining that the tilt state falls within a first tilt threshold, identifying a numeral associated with the first button;
 - upon determining that the tilt state falls within a second tilt threshold, identifying a first character associated with the first button;
 - upon determining that the tilt state falls within a third tilt threshold, identifying a second character associated with the first button; and
 - upon determining that the tilt state falls within a fourth tilt threshold, identifying a third character associated with the first button.
19. The method of Claim 18, further comprising upon determining that the tilt state falls within a fifth tilt threshold, identifying a fourth character associated with the first button.

20. The method of Claim 18, wherein the first, second, and third characters are lower-case letters, and wherein, upon determining that the tilt is greater than a predetermined capital threshold, identifying a capital letter associated with the first button.

21. The method of Claim 18, wherein tilt is sampled using a tilt sensor and a microprocessor.

22. The method of Claim 21, wherein the tilt sensor includes at least one acceleration sensor.

23. The method of Claim 21, wherein the tilt sensor includes at least one digital camera.